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An EDI Strategy
for Defense Procurement

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Daniel J. Drake

An EDI Strategy for Defense Procurement

Executive Summary

The Department of Defense concluded in a 1990 Defense Management Review Decision that it could realize substantial cost savings by replacing a variety of commonly used business documents, such as purchase orders, request for quotations, discrepancy reports, and bills of lading, with their electronic equivalents. It further concluded that the procurement function, including contract administration and payment, would be the source of most of those savings. In 1993, the National Performance Review — which called for, among other actions, improving the Federal government's procurement practices through expanded use of electronic commerce techniques, such as electronic data interchange (EDI) — established a need for the DoD to reenergize its efforts to eliminate burdensome and costly procurement paperwork. More recently, the Deputy Under Secretary of Defense for Acquisition Reform's Electronic Commerce in Contracting Process Action Team recommended rapid implementation of electronic commerce capability so the majority of DoD procurement actions are conducted through EDI.[1] This strategy constitutes one step in focusing that effort.

Organizations, both public and private, that have had the most success in using EDI to improve their procurement functions and reduce associated costs share several common characteristics:

♦ They procure mostly supply-type items, such as food, spare parts, medical equipment, and office supplies, that are described in terms (standard nomenclature, part numbers, or line items) that computer applications can easily recognize.

♦ They buy repeatedly from the same vendors, many of whom routinely use EDI in dealing with other customers.

♦ They process a large number of routine procurement actions every business day.

♦ They employ extensive automation in preparing and awarding their procurement actions.

These findings also have application to the DoD. Defense activities that make extensive use of automation to procure large volumes of supply-type items

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[1] Office of Deputy Under Secretary of Defense for Acquisition Reform, *DoD Electronic Commerce (EC)/Electronic Data Interchange (EDI) in Contracting*, Department of Defense, December 1993.

on a repetitive basis from a relatively small number of private-sector vendors who are well-versed in the use of advanced information systems technology clearly offer the greatest potential for improved performance and reduced costs through EDI. Those activities also warrant priority in the funding of EDI investments.

Those large-volume procurement actions offer additional EDI opportunities at Defense Finance and Accounting Service transportation and contract payment centers when shipping documents and invoices are processed.

To ensure the DoD reaps the maximum benefit from the use of EDI in procurement, we recommend that it adopt a three-tier implementation strategy.

The first tier consists of 70 activities, most with DoD or Military Service-wide procurement responsibility, that possess many of the workload characteristics favorable to EDI — a large number of procurement actions for supply-type items (these activities accounted for nearly half of the DoD's 12 million procurement actions in FY92); extensive automation; and vendors experienced in using EDI. Consequently, they can readily justify immediate investments in EDI, with a firm promise of quick and substantial cost savings for use in either meeting budget-reduction targets or funding additional EDI investments. They include Defense Commissary Agency regional activities; Defense Logistics Agency centers; Defense Contract Management Command contract administration offices; Defense Finance and Accounting Service payment centers; some Military Service weapon system program offices, central supply and maintenance activities, and major military hospitals; and several large installations.

The second tier — consisting predominantly of 42 Military Service activities that support moderate-sized installations or relatively small logistics operations — includes a number of activities that ultimately may be excellent candidates for EDI. However, these activities possess only some of the procurement characteristics favorable to EDI. In addition, the composition of their future procurement workloads is somewhat unclear because of the DoD's emphasis on increasing the use of central procurement actions, national contracts, and other government-wide contracts. Consequently, the DoD should put a lower priority on implementing EDI at these activities than at first tier activities.

The third tier comprises the balance of over 1,300 DoD activities. Many of these activities issue mostly service contracts that are less conducive to EDI. Others deal predominantly with small, local businesses that either receive only one or two procurement actions annually or do not have the capability to exchange any business information electronically. Still others award only a few procurement actions each year, relying extensively upon central procurement activities and national contracts. The DoD should address the EDI requirements of these activities on an individual basis.

By following this strategy, the DoD will target the most promising activities for early implementation, obtain the maximum benefits from EDI quickly, and establish a foundation for additional successful applications in the future.

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CHAPTER 1

Introduction

BACKGROUND

The Department of Defense has a long history of commitment to replacing routine, paper-based documents with their electronic equivalents. Within the past 5 years, however, that commitment has become even more focused:

◆ In a 1988 policy memorandum, the Deputy Secretary of Defense directed DoD Components to make "maximum use of electronic data interchange (EDI) for the paperless processing of all business-related transactions."

◆ A 1991 Defense Management Review Decision called for DoD Components to transmit 92 percent of their business transactions using EDI by the fourth quarter of FY96.

◆ The 1993 *National Performance Review* reiterated the importance of the DoD's initiatives by directing Federal agencies to improve their procurement practices through increased use of EDI techniques.

In response to these and other charges, various DoD Components have launched a number of EDI initiatives aimed at improving their procurement operations.[1] They include establishing bulletin boards to broadcast requirements; transmitting delivery orders, requests for quotations, and purchase orders to vendors; receiving invoices from vendors; and paying vendors, all electronically. Those initiatives have a common objective of reducing costs by either eliminating the processing of paper, shortening procurement action processing times, or increasing competition among vendors to obtain lower prices. While some of the initiatives have succeeded, others have been difficult to implement. In many of the latter situations, however, the implementing Military Service, Defense agency, or activity ignored some of the keys to successful uses of EDI in procurement. Drawing upon extensive private- and public-sector experience, organizations with the most success in using EDI to improve their procurement operations share several characteristics:

◆ They buy mostly supply-type items — such as food, spare parts, medical equipment, and office supplies — that are described in terms that computer applications easily recognize, including standard nomenclature, part numbers, or line items, to cite a few.

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[1] See LMI Report DL001-06R1, *A Business Case for Electronic Commerce*, September 1990, Thomas P. Hardcastle and Thomas W. Heard, which concludes that most of the DoD's savings through the use of EDI will occur in the functional area of procurement, including contract administration and payment.

- They process a large number of routine procurement actions every business day.

- They buy repeatedly from the same vendors, many of whom routinely use EDI in dealing with other customers.

- They employ extensive automation in preparing, awarding, and processing their procurement actions.

The DoD's long-term success in applying EDI to the procurement function hinges upon its ability to capitalize upon these same characteristics.

PURPOSE OF REPORT

This report lays out a strategy for the DoD to follow in fulfilling the requirements of the *National Performance Review* to improve its procurement practices through increased use of EDI techniques. The proposed strategy seeks to capitalize upon the characteristics shared by all successful EDI applications in procurement — predominantly supply-type items, repetitive awards to EDI-capable vendors, large numbers of routine procurement actions, and extensive use of automation.

ORGANIZATION OF REPORT

Chapter 2 provides an overview of Defense procurement. It begins with a brief description of the annual workload, including the number and value of procurement actions. Then it addresses several recent and prospective consolidations of procurement responsibilities and changes in procurement methods. This overview establishes the importance of considering an activity's current and future procurement responsibilities when formulating EDI applications.

Chapter 3 examines a sample of 18 Defense buying activities, including the types of items they procure, the types and numbers of procurement actions they award annually, and the concentration of those actions with particular vendors. This examination shows that some activities are positioned much more favorably than others to establish an EDI program in support of their procurement responsibilities.

Chapter 4 lays out a strategy for the DoD to move forward with an effective and economically viable EDI program in procurement.

CHAPTER 2

Overview of Defense Procurement

Defense procurement, including contract administration and payment, is undergoing considerable change. Declining budgets are forcing DoD Components to realign organizational missions, consolidate buying responsibilities, and adopt a variety of innovative procurement methods. This chapter provides an overview of those changes.

PROCUREMENT TRENDS

In FY93 the DoD issued nearly 12 million procurement actions to purchase supplies and services valued at approximately $138 billion. We define procurement actions as contract awards, purchase orders, delivery orders, and their funded modifications but not unfunded modifications, invoices, nor payments. Ninety-eight percent of those actions entailed purchases valued at less than $25,000. These small purchases totaled approximately $14 billion, or 10 percent of the DoD's total for the fiscal year.[1]

Although the DoD experienced a fairly steady level of procurement activity during the 10-year period from FY84 through FY93, both the numbers of actions and the values of obligations (when adjusted for inflation) have been decreasing since FY87, primarily because of smaller budgets. As Table 2-1 shows, Defense procurement peaked at approximately 15.3 million actions and $157 billion in obligations in FY87, substantially higher than FY93 levels.

Table 2-1, however, illustrates just one dimension of DoD procurement — its overall magnitude. In addition to experiencing fewer procurement actions and smaller obligations, the DoD is also reducing the procurement responsibilities of the Military Services. As Table 2-2 shows, both the Army and Air Force issued substantially fewer actions in FY93 than in FY90 (down 36 and 47 percent, respectively).[2] In contrast, DeCA issued more than 20 percent of the DoD's procurement actions in FY93; while the Defense Logistics Agency's (DLA's) annual procurement workload remained steady but represents a larger proportion of overall volume (9 percent for FY90 and 10 percent in FY93).

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[1] Department of Defense, Report P03, *Prime Contract Awards*, 1984 - 1993.

[2] Much of this decrease stems from the assignment of all commissary procurements to the Defense Commissary Agency (DeCA) beginning 1 October 1991. Unexplainably, the Navy does not show a similar decrease in procurement workload even though its commissary responsibilities were also transferred to DeCA.

Table 2-1.
DoD Procurement Actions and Obligations: FY84 to FY93

Reporting period	Annual contract	
	Obligations ($ in billions)	Numbers of actions (in millions)
FY84	146	14.8
FY85	164	14.7
FY86	159	14.4
FY87	157	15.3
FY88	151	14.8
FY89[a]	139	9.3
FY90	145	13.2
FY91	151	12.3
FY92	136	12.1
FY93	138	11.9

[a] Actions and dollars undercounted due to computer software development delays.

Table 2-2.
DoD Procurement Actions by Component: FY90 to FY93

Component	Numbers of actions (millions)			
	FY90	FY91	FY92	FY93
Army	3.6	3.5	2.4	2.3
Navy	2.3	2.4	2.3	2.2
Air Force	5.7	4.9	3.1	3.0
DLA	1.1	1.0	1.2	1.2
DeCA	–	–	2.5	2.7
Other	0.5	0.5	0.6	0.5
Total	13.2	12.3	12.1	11.9

Source: Directorate for Information Operations and Reports.

FUNCTIONAL CONSOLIDATIONS

The shifting of procurement responsibilities from the Military Services to Defense agencies has its origin with two recent consolidation decisions: the October 1991 transfer of all commissary procurements from the Military Services to the newly established DeCA, and the ongoing transfer of management (including procurement) responsibility for consumable items from the Military Services to DLA. Those decisions are concentrating the procurement actions for

both commissary and consumable items at fewer activities, which enhances the prospects for EDI. The establishment of DeCA eliminates all Military Service procurement responsibility, while the transfer of consumable items to DLA reduces the procurement responsibilities of the Military Services' supply centers.

Two additional functional consolidations are also affecting the DoD's potential use of EDI. In October 1991, the DoD assigned responsibility for all contract administration to the Defense Contract Management Center (DCMC), a DLA component. Under that consolidation, DCMC absorbed the DLA's Defense Contract Administration Service and the plant representative offices of the Army, Navy, and Air Force. Defense contractors now deal with only one contract administration organization – DCMC. In turn, DCMC processes all contract administration transactions through six district offices, using a single automated system.

Also in 1991, the DoD established the Defense Finance and Accounting Service (DFAS), assigning it responsibility for paying all DLA and DeCA contracts, Defense transportation contracts, and Military Service contracts that are delegated to DCMC for administration.[3] DFAS carries out those responsibilities primarily at two centers: Indianapolis, Indiana (for transportation payments) and Columbus, Ohio (for contract payments). DFAS also oversees the accounting and finance offices that pay installation-support contracts. It plans to eventually assign payment responsibility for those contracts to either regional payment centers or a single national center. These realignments of payment responsibility will ultimately result in a few DFAS activities processing all DoD invoices and payments.

The DoD is planning several additional consolidations that could further affect its use of EDI in procurement. Those consolidations include the following:

◆ Defense Management Review Decision (DMRD) 908, "Depot Maintenance Consolidation," calls for the DoD to examine the feasibility of centralizing its maintenance of military weapons. If that centralization occurs, the DoD could have fewer, but larger maintenance depots, each with an expanded procurement responsibility.

◆ The 1993 Base Closure and Realignment Commission has directed the restructuring of several buying activities, with two particularly noteworthy. The Defense Construction Supply Center (DCSC), Columbus, Ohio, will absorb the mission of the Defense Electronics Supply Center (DESC), Dayton, Ohio; and the Defense Personnel Support Center (DPSC), Philadelphia, Pennsylvania, will merge with the Defense Industry Supply Center, also in Philadelphia. These actions will increase substantially the number of buying actions at DCSC and DPSC.

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[3] DFAS uses DCMC's automated system – Mechanization of Contract Administration Services – for voucher examination and payment of all DCMC-administered contracts.

+ The closing of various military bases and the subsequent transfer of their units and functions to other bases could also affect the magnitude of future procurement responsibilities at the gaining bases. As an example, the closing of Plattsburg Air Force Base (AFB) in New York and the associated expansion of the airlift role of McGuire AFB in New Jersey should increase the number of procurement actions that McGuire issues each fiscal year.

Changes in Procurement Methods

A variety of innovative procurement methods are also affecting the number and types of procurement actions at DoD buying activities. We discuss several of those methods below.

Direct Vendor Delivery

Commercial Manufacturers

Some central supply activities are implementing new logistics concepts that make use of commercial distribution channels to deliver products to military installations. For example, the U.S. Army Tank-Automotive Command (TACOM), the DoD's item manager for automotive and truck tires, plans to use the distribution networks of its suppliers to ship tires directly to military bases. Instead of making several large purchases of tires and storing them in DoD warehouses, TACOM proposes to establish requirements contracts for tires and then convert all supply requisitions into electronic delivery orders for transmittal to the manufacturers. The manufacturers will, in turn, forward the requisitions to regional warehouses for shipment to the requiring installations and units. This procurement method is not new to the DoD, however. Since 1987, several DLA supply centers (including DCSC, DESC, and Defense General Supply Center) have been using EDI to place orders through the Paperless Order Placement System with manufacturers for a variety of shelf-life-sensitive commodities, such as film, batteries, chemicals, and adhesives. The manufacturers then deliver those items directly to the requisitioning units. DLA has found that using EDI to order the items, in combination with direct vendor delivery, reduces inventories and improves customer service.

Local Suppliers

Another innovative procurement method — Small Procurement Electronic Data Interchange (SPEDI) — is in place at the Naval Air Warfare Center (NAWC), China Lake, California. SPEDI is an electronic catalog network that NAWC personnel use to order support items. The contractors supplying the SPEDI items, which include office supplies, computer equipment and peripherals, and hardware materials, are awarded requirements contracts that specify the use of electronic ordering and bar-code technology.

Instead of obtaining various support items from either base supply or local purchase, NAWC personnel access an electronic catalog of supply items and select those that they want at the listed price. SPEDI then transmits the necessary information electronically to the supporting vendor along with the bar-code formats. The vendor packages the items, affixes bar-code labels, and delivers the items to base receiving no later than the next business day. A receiving clerk, using a hand-held microcomputer and laser wand, reads the bar codes, matches them to items on a due-in list, and determines the best truck distribution route. When a package is delivered to the appropriate office, laboratory, or shop, the truck driver uses another hand-held microcomputer to read the ordering personnel's bar-coded name tag. The computer data are downloaded at the end of each delivery to a receiving system for transmission to accounting and finance for payment.

The procurement office at NAWC, China Lake, competitively awards the requirements contracts and oversees the electronic catalog ordering process. Instead of processing thousands of small purchase orders through an automated procurement system, however, it establishes contracts that lead to the creation of electronic linkages between NAWC personnel and base suppliers.

Third-Party Distribution

The DoD's Medical Functional Integration Management Logistics subgroup is also assessing the value of direct vendor delivery. But, instead of using manufacturers' distribution channels, as in the TACOM application, the subgroup plans to use third-party distributors to deliver medical items directly to military clinics and hospitals. In an ongoing test, the Department of Veterans Affairs and DPSC are placing medical supply contracts directly with major manufacturers. The manufacturers then use third-party distributors, designated as prime vendors, to provide overnight delivery services. Through the use of these contracts, the hospitals hope to lower their inventories and reduce the number of requisitions they submit to military supply systems. To obtain those benefits, however, they will need to increase dramatically the number of delivery orders they place with suppliers, which should constitute a major EDI opportunity.

Government Distribution

The General Services Administration (GSA) has developed an electronic catalog for use by its Federal customers to order office supplies. GSA then provides overnight delivery from its warehouses using third-party delivery services. In the Washington, D.C., metropolitan area, for example, GSA uses Roadway Package Service to deliver items directly to customers' offices.

The long-term impact of this system will be fewer procurement actions at most Defense installations served by a GSA regional warehouse. However, GSA will experience an increase in the number of procurement actions that it places with manufacturers, using an EDI ordering system that it already has in place.

Because of the success of its EDI program, GSA discontinued all paper purchase orders for small purchases and delivery orders under established contracts beginning 1 February 1994. GSA's long-term plan is for high-volume contractors to receive EDI orders, with all other contractors receiving orders through facsimile transmissions.

Increase in Small Purchase Threshold

Current legislation [House of Representatives (HR) Bills 2238 and 3586] proposes to raise an agency's simplified acquisition threshold (formerly the small purchase threshold) from $25,000 to $100,000 following its installation of an EDI system — Federal Acquisition Computer Network.[4] This action would increase by approximately 120,000 the number of procurement actions that fall under the less formal solicitation and ordering procedures of the Federal Acquisition Regulation, Part 13, "Small Purchase and Other Simplified Procedures." Furthermore, since these simplified procedures facilitate small purchase solicitation and ordering through EDI, many of those 120,000 paper actions could be accomplished electronically.

Increased Local Purchase Authority

Typically, only items that are either not available from the central supply system or cannot be provided on a timely basis are authorized for local purchase. The DoD, however, is now considering an initiative to grant installation-level contracting offices the authority to buy commercial items directly from local vendors instead of requisitioning them through the supply system. (The Air Force is already conducting a test of giving its base contracting offices expanded authority for making local purchases.)

In addition, the *National Performance Review* calls for wider use of purchase cards (commonly referred to as government credit cards) as a less complicated and faster means of acquiring low-cost supplies and services without going through the local buying office. The use of those cards by the local buying office's traditional clientele could significantly reduce procurement action volume and therefore the number of documents available for EDI.

Summary

Defense procurement is undergoing dramatic change. The number of procurement actions and their value are decreasing. In striving to reduce its costs, the DoD has consolidated all commissary operations under DeCA, contract administration under DCMC, and contract payments under DFAS. It is also examining a number of other functional consolidations. In addition, DoD

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[4] HR 2238 — Federal Acquisition Improvement Act of 1993; HR 3586 — Defense Acquisition Reform Act of 1993.

Components are adopting a variety of new procurement methods, including direct vendor delivery for both nationally and locally purchased items of supply, expanded use of third-party delivery services, and increased reliance upon GSA for office supplies and other commodities. Finally, the prospects of an increase in the small purchase threshold to $100,000 and more authority for local purchases suggest even more changes are on the horizon.

In spite of the magnitude of these changes, they share several common bonds. They tend to reduce the number of activities with substantial procurement responsibility; consolidate procurement responsibility (incl ding administration and payment) for similar items or commodities at fewer locations; and increase the DoD's reliance upon commercial storage and distribution capabilities. They also promise to create additional activities that process a large number of procurement actions every business day, which is one of the characteristics fundamental to successful EDI applications.

In the next chapter, we examine for a number of DoD activities three of the key characteristics that are associated with successful EDI programs in procurement — the types of items procured, the number of procurement actions issued, and the concentration of those actions with individual vendors.

CHAPTER 3

Procurement Characteristics

This chapter begins to break down the 12 million procurement actions that the DoD issued in FY92. It first discusses the different types of procurement activities within the DoD. Then, using a sample of 18 activities, it addresses the procurement characteristics of DoD activities, the number of supply contracts they issue, and the number of vendors providing supplies.

PROCUREMENT ACTIVITIES

Although more than 1,300 Defense buying activities awarded one or more contracts in FY92, those activities have dramatic differences. They differ in the dollar value of the items or services they are authorized to procure. They differ in the customers they support — some activities support a particular installation, others support the entire DoD. They also differ in procurement responsibility, particularly the types of items they are authorized to procure, whether medical supplies, support equipment for weapon systems, or computer software.

One effective means of categorizing the DoD's procurement activities is by geographical responsibility, such as national, regional, or local.

National procurement activities provide specific supplies and services for either the entire DoD, a Military Service, or a Defense agency. They include the following:

♦ Inventory control points (ICPs) that buy particular Federal Supply Catalog items; for example, DESC is an ICP that buys electronic components for all DoD Components.

♦ Weapon system program offices that develop and buy particular weapon systems; for example, the Air Force's F-22 System Program Office is the sole buying office authorized to issue development, production, and support contracts for the F-22 aircraft.

♦ Specialized buying activities that have the exclusive authority to procure particular commodities or services using unique procedures; for example, the Defense Fuel Supply Center is one of these activities — it procures all fuels for the DoD.

Regional procurement activities are contracting offices that buy certain supplies and services in support of all installations belonging to a particular Military Service within a designated region. Many of these types of activities are

outgrowths of the Navy Field Contracting System in which Navy installations forward all requirements above their authority to a regional buying activity. The DeCA is also categorized as a regional procurement activity because of its assignment of procurement management responsibility to regional headquarters. Other DoD Components, including the Army, are now consolidating some of their small contracting offices to form regional buying activities.

Local procurement activities are contracting offices that buy supplies and services in support of a particular installation or base. These types of activities are located primarily at military installations and number in the hundreds.

Even though we may categorize DoD's procurement activities as national, regional, or local, many bases have more than one buying activity, often one for base contracting, using appropriated funds, and another for morale, welfare, and recreation (MWR) contracting, using nonappropriated funds. (Those funds cannot be commingled, which creates the need for separate buying activities.) Some bases even have several buying activities. As an example, Camp Lejeune, a large Marine Corps installation in North Carolina, has five buying activities: a base contracting office, an MWR office, a naval hospital, a public works center, and an air station. All of these Camp Lejeune buying activities duplicate the local buying function. Until October 1991, when DeCA became operational, Camp Lejeune had a sixth buying activity, a Marine Corps regional commissary operation.

While the use of national contracts increases the number of procurement actions issued at a central activity, it decreases the number at the local level. The central activities also issue contract actions that typically include more line items than those issued at the local levels, which, in turn, creates more delivery, receiving, and payment documents. Nonetheless, advances in telecommunications technology and procurement methods are blurring the traditional definitions of centralized and decentralized procurement activities. To illustrate, the joint DoD-Department of Veterans Affairs Prime Vendor program for medical supplies uses national, centrally awarded contracts; but, it combines those with regional distribution contracts and local activities placing orders directly with manufacturers.

PROCUREMENT WORKLOADS

As a means of investigating the procurement characteristics of various types of DoD activities, we selected 18 activities, representing all Military Services and 2 Defense agencies, for more in-depth review. To ensure diversity among the activities, we selected 3 national, 2 regional, and 13 local procurement activities:

◆ National procurement

  ► U.S. Army TACOM, Warren, MI

  ► DCSC, Columbus, OH

- ▶ U.S. Navy, Aviation Supply Office (ASO), Philadelphia, PA

- ◆ Regional procurement

  - ▶ DeCA, all regions

  - ▶ Fleet Industrial Supply Center (FISC), Jacksonville, FL

- ◆ Local procurement

  - ▶ Marine Corps Base, Camp Lejeune, Jacksonville, NC

  - ▶ NAWC, China Lake, CA

  - ▶ Naval Construction Battalion Center (NCBC), Port Hueneme, CA

  - ▶ Fort Bragg, Fayetteville, NC

  - ▶ Fort Lee, Petersburg, VA

  - ▶ Fort Campbell, Hopkinsville, KY

  - ▶ Fort Knox, Elizabethtown, KY

  - ▶ Fitzsimons Army Medical Center (AMC), Aurora, CO

  - ▶ Anniston Army Depot, Anniston, AL

  - ▶ Little Rock AFB, Little Rock, AR

  - ▶ Langley AFB, Hampton, VA

  - ▶ Ellsworth AFB, Rapid City, SD

  - ▶ Shaw AFB, Sumter, SC.

Table 3-1 shows the number of procurement actions that the 18 activities placed in FY92 and the percent of those actions that were for supply-type items. The total number of procurement actions range from approximately 2.5 million at DeCA to less than 15,000 at Anniston Army Depot (ANAD). Four of the activities — TACOM, DCSC, DeCA, and ANAD — overwhelmingly procure supply-type items (i.e., more than 90 percent of their actions are for supplies), while 9 of the activities — Camp Lejeune, NAWC China Lake, Fort Lee, Fort Campbell, Fort Knox, and Little Rock AFB, Langley AFB, Ellsworth AFB, and Shaw AFB — issue fewer contracts for supplies than for services (i.e., less than 50 percent of their procurement actions are for supplies).

Table 3-1
Number of Procurement Actions and Percent Supply by Activity

Activity	Number of actions	Percent supply
National procurement		
TACOM, MI	17,047	91
ASO, PA	32,697	60
DCSC, OH	244,177	99
Regional procurement		
DeCA, all regions	2,510,108	99
NSC, Jacksonville, FL	35,693	78
Local procurement		
Camp Lejeune, NC	29,867	38
NAWC, China Lake, CA	52,538	45
NCBC, Port Hueneme, CA	24,806	67
Fort Bragg, NC	35,713	53
Fort Lee, VA	19,011	21
Fort Campbell, KY	51,785	33
Fort Knox, KY	44,409	32
Fitzsimons AMC, CO	16,565	59
ANAD, AL	12,246	93
Little Rock AFB, AR	28,351	20
Langley AFB, VA	30,470	47
Ellsworth AFB, SD	33,303	44
Shaw AFB, SC	22,100	44

Table 3-1 also shows that just because an activity is categorized as either a national or regional procurement activity, it does not necessarily issue a large number of procurement actions. Four of the local procurement activities (NAWC, China Lake; Fort Bragg; Fort Campbell; and Fort Knox) issued more actions in FY92 than three of the five national and regional activities.

Although our sample of activities is rather limited, Table 3-1 further suggests that national and regional procurement activities primarily buy supplies. The Navy's ASO, which issues a large number of repair orders for contractor maintenance of aviation equipment (service contracts), appears to be somewhat different, however.

The local procurement activities clearly represent a wide variety of procurement responsibilities. They could also be grouped as follows:

♦ ANAD — It is the only local activity with more than 90 percent supply actions; it procures maintenance parts and industrial supplies for the M-1 Abrams tank overhaul line.

- NCBC, Port Hueneme; Fitzsimons AMC; and Fort Bragg — Each of these activities issues more actions for supplies than for services but at lower levels than ANAD.

- All others — The remaining activities all issue more actions for services than for supplies.

As we noted previously, the number of procurement actions, particularly for supply-type items, is one of the keys to successful applications of EDI. But no hard-and-fast rules exist. For example, an activity like ASO issues approximately 33,000 procurement actions each year, with nearly 20,000 for supplies. During a typical year, it awards approximately 75 supply contracts every business day (assuming 260 business days each year). Clearly, ASO appears to be an excellent candidate for EDI. Now, consider a much smaller activity with an entirely different mission. Fort Lee issues fewer than 20,000 procurement actions annually, including almost 4,000 for supplies, or 15 supply contracts every day. It too could be a viable candidate for EDI. Nonetheless, at both ASO and Fort Lee, other factors, particularly the types of procurement documents that they issue, the number of vendors that support their requirements, the capability of their vendors to receive and process those documents electronically, and the cost of establishing and maintaining an EDI capability, also need to be considered.

PROCUREMENT DOCUMENTS

The DoD uses a variety of procurement documents, including contract awards, contract modifications, purchase orders, delivery orders, request for quotations, request for proposals, invitation for bids, and solicitation amendments. The least complex of these documents — purchase orders, delivery orders, and request for quotations, including their modifications and amendments — typically are the best candidates for replacement through EDI, primarily because they contain relatively little text.

Not only is the amount of text in a procurement document important, but the number of secondary documents that the original document generates also need to be considered. Table 3-2 shows a typical range of secondary documents for various types of original procurement documents.

A local procurement activity typically uses a purchase or delivery order to buy supply-type items, which then results in one delivery notice, one invoice, and one payment. In contrast, regional and national procurement activities typically award a variety of supply procurement actions. Some call for a single delivery, much like a purchase or delivery order from a local activity. Others result in numerous shipping notices, receiving reports, invoices, and payments, often spread over several months. Those documents, in turn, lead to others, such as

Table 3-2.
Secondary Procurement Documents

Procurement document	Number of line items	Number of secondary documents		
		Delivery notice	Invoice	Payment
Purchase order	1 – 3	1	1	1
Delivery order	1 – 3	1	1	1
Simple contract	1 – 10	1 – 6	1 – 6	1 – 6
Major contract	100s – 1,000s	1,000s – 10,000s	10s – 1,000s	10s – 1,000

amended shipping instructions and contract modifications. Weapon systems program offices also place contracts that create numerous secondary documents. For example, a complex contract for a new aircraft routinely includes thousands of line items for software, support equipment, spare parts, and technical manuals, which eventually results in tens of thousands of deliveries, invoices, and payments. Even though the types of procurement documents that an activity issues are an important consideration, we have little insight into the specific procurement documents issued by the 18 activities.

Nonetheless, we did have access to data on the number of contract actions, deliveries, and contract modifications for various types of Air Force activities. Table 3-3 presents those data. It shows, for example, that 4 systems acquisition activities issued 20,512 contracts that resulted in 988,773 deliveries and 228,027 modifications. Every contract that these activities issued led to the eventual creation of an additional 59 documents (deliveries plus modifications divided by contracts). In contrast, the 5 research and development activities issued 12,934 contracts, but each of those contracts led to the creation of only slightly more than 5 additional documents. The 5 supply and maintenance centers had procurement patterns similar to the system acquisition activities — every contract led to more than 54 additional contract-related documents. For physically complete contracts (i.e., all deliveries recorded), the number of secondary procurement documents is even more impressive at the 4 systems acquisition activities: 2,767 contracts resulted in 340,077 shipments and 81,136 modifications, or 152 additional documents per primary contract action. For the 5 supply and maintenance activities 1,803 physically complete contracts had 110,176 shipments and 13,114 modifications, or 68 documents for every primary contract action.

The systems and supply/maintenance activities that generate the large numbers of secondary procurement documents are distinguished from local procurement activities in that most of their procurements are administered by DCMC and paid by DFAS — Columbus Center (DFAS-CO). As a consequence, DCMC and DFAS-CO are generating, receiving, and processing the majority of the secondary documents created on behalf of Defense buying activities, and thus present major EDI opportunities for contract modifications (pricing actions, amended shipping instructions); material receiving and inspection reports; invoices; progress payments requests; and payments.

Table 3-3.
Secondary Procurement Documents — Air Force

Types and number of activities	Number			Deliveries plus modifications divided by contracts
	Contracts	Deliveries	Modifications	
Systems (4)	20,512	988,773	228,027	59.3
Test centers (2)	2,215	11,237	17,998	13.2
Research and development (5)	12,934	7,095	59,946	5.2
Supply/maintenance (5)	8,115	378,665	63,534	54.5

Source: Air Force Material Command's Acquisition Management Information System.

TRADING PARTNERS

The DoD obtains its supplies and services from a wide variety of vendors, ranging from *Fortune 500* firms to small, locally owned businesses. The capability of those vendors to exchange business documents electronically with DoD activities (i.e., become EDI trading partners) is an important consideration in the development of an EDI strategy for procurement. However, each DoD procurement activity deals with a unique set of vendors. Although unable to review the EDI capability of every vendor supporting the 18 activities in our sample, or even their use of automation in procurement, we did examine how the activities make use of their vendors.

Table 3-4 shows the number of supply actions that each activity placed in FY92, the number of different vendors that provided supply items during the year, and the number (and percent) of those vendors that received only one procurement action. As this table indicates, even the activities that issued the fewest number of supply actions dealt with more than 1,200 vendors during the year, with the 18 activities averaging approximately 3,000 vendors each. Ten of the activities issued exactly one action to half or more of their vendors, while only DCSC and DeCA routinely placed multiple orders with most of their vendors.

Now, suppose we assume that the vendors receiving just one procurement action received it because of some type of unique demand — such as satisfying an urgent or once-a-year requirement — and that those vendors are not good candidates for exchanging procurement information with DoD activities electronically. If we eliminate those vendors from the number supporting each of the 18 activities, then the average number of procurement actions received by the remaining vendors provides a useful metric for measuring the prospects of a successful application of EDI. Table 3-5 shows those averages. Although not unexpected, DeCA presents the most favorable characteristics. If we ignore the 164 vendors that received just one supply procurement action in FY92, DeCA placed an average of slightly more than 761 procurement actions with its

Table 3-4.
Supply Vendor Profile

Activity	Number		Vendors with 1 action	
	Supply actions	Supply vendors	Number	Percent
National procurement				
TACOM, MI	5,882	1,214	626	52
ASO, PA	19,745	2,759	1,238	45
DCSC, OH	241,735	4,739	921	19
Regional procurement				
DeCA, all regions	2,485,007	3,431	164	5
FISC, Jacksonville, FL	27,821	4,250	2,140	50
Local procurement				
Camp Lejeune, NC	11,317	2,938	1,613	58
NAWC, China Lake, CA	23,407	3,354	2,207	66
NCBC, Port Hueneme, CA	16,542	3,828	2,228	58
Fort Bragg, NC	18,981	4,503	2,151	48
Fort Lee, VA	4,063	1,669	982	59
Fort Campbell, KY	17,072	4,003	1,952	49
Fort Knox, KY	14,087	4,159	2,203	53
Fitzsimons AMC, CO	9,688	2,569	1,322	51
ANAD, AL	11,331	1,783	980	55
Little Rock AFB, AR	5,880	1,446	726	50
Langley AFB, VA	14,389	2,765	1,363	49
Ellsworth AFB, SD	5,617	1,047	505	48
Shaw AFB, SC	9,685	1,775	841	47

Note: Although TACOM reported 17,047 supply procurement actions for FY92, it could provide information on its trading partners for only 5,882 large supply procurement actions; we derived DeCA's trading partner profile from its invoices, which are directly related to orders.

other 3,267 vendors — clearly an ideal environment for EDI. Only DCSC with 63.1 supply procurement actions per vendor that received more than one action; NAWC, China Lake, with 18.5; ANAD with 12.9; and ASO and FISC, Jacksonville, both with 12.2 actions had averages larger than 10. None of the solely installation-level procurement activities averaged more than 10.

Table 3-5.
Average Number of Supply Actions per Vendor

Activity	Number of supply actions to vendors receiving more than one action	Number of vendors receiving more than one action	Average per vendor
National procurement			
TACOM, MI	5,256	588	8.9
ASO, PA	18,507	1,521	12.2
DCSC, OH	240,814	3,818	63.1
Regional procurement			
DeCA, all regions	2,484,843	3,267	761.2
FISC, Jacksonville, FL	25,681	2,110	12.2
Local procurement			
Camp Lejeune, NC	9,704	1,325	7.3
NAWC, China Lake, CA	21,200	1,147	18.5
NCBC, Port Hueneme, CA	14,314	1,600	8.9
Fort Bragg, NC	16,830	2,352	7.2
Fort Lee, VA	3,081	687	4.5
Fort Campbell, KY	15,120	2,051	7.3
Fort Knox, KY	11,884	1,956	6.1
Fitzsimons AMC, CO	8,366	1,247	6.7
ANAD, AL	10,151	803	12.9
Little Rock AFB, AR	3,813	1,131	7.6
Langley AFB, VA	12,297	2,265	9.3
Ellsworth AFB, SD	3,085	871	9.4
Shaw AFB, SC	6,934	1,383	9.5

Some private-sector companies use the rule of thumb that a procurement activity can justify establishing an EDI relationship with any vendor that receives 50 or more actions per year.[1] Table 3-6 shows the number of supply actions that each activity placed in FY92, the number of vendors with 50 or more supply actions, the percent of all supply vendors that received 50 or more actions, the number of actions that those vendors received, and the percent of all supply actions that the vendors with 50 or more actions received. Again, DeCA clearly is an anomaly. Nearly 2,100 of its vendors (or 61 percent) received more than 50 procurement actions each in FY92. Those same vendors accounted for approximately 99 percent of DeCA's procurement actions that year. Only DCSC comes close to DeCA: 667 of its vendors (or 14 percent) received more than 50 actions each, accounting for approximately 86 percent of all procurement actions.

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[1] In contrast to this threshold of 50 per year, General Motors has directed that all vendors that submit six or more invoices per year must have an EDI capability.

Table 3-6.
Vendor Concentration

Activity	Number of supply actions	Supply vendors with 50 or more actions			
		Number	% of all vendors	Number of actions	% of all actions
National procurement					
TACOM, MI	5,882	17	1	1,662	28
ASO, PA	19,745	56	2	8,633	44
DCSC, OH	241,735	667	14	207,892	86
Regional procurement					
DeCA, all regions	2,485,007	2,091	61	2,479,328	99
FISC, Jacksonville, FL	27,821	92	2	12,675	46
Local procurement					
Camp Lejeune, NC	11,317	21	1	1,576	14
NAWC, China Lake, CA	23,407	12	<1	16,241	69
NCBC, Port Hueneme, CA	16,542	45	1	5,735	35
Fort Bragg, NC	18,981	22	<1	1,708	9
Fort Lee, VA	4,063	0	0	0	0
Fort Campbell, KY	17,072	31	1	2,480	15
Fort Knox, KY	14,087	14	<1	1,280	9
Fitzsimons AMC, CO	9,688	12	<1	854	9
ANAD, AL	11,331	31	2	6,319	56
Little Rock AFB, AR	4,575	8	<1	774	13
Langley AFB, VA	16,073	44	2	4,587	32
Ellsworth AFB, SD	4,898	11	1	1,416	25
Shaw AFB, SC	8,866	28	2	3,015	31

Several activities — TACOM; ASO; FISC, Jacksonville; NAWC, China Lake; and ANAD — placed 50 or more procurement actions with less than 2 percent of their vendors, but those same vendors still accounted for more than 40 percent of all actions. Others, including Fort Bragg, Fort Lee, Fort Knox, and Fitzsimons AMC, had even more diversity in procurement actions — fewer than 1 percent of their vendors received 50 or more procurement actions, accounting for less than 10 percent of all actions.

Another perspective on the buying patterns of local procurement activities is the location of their vendors. As an illustration, NCBC, Port Hueneme, issued 16,542 supply procurement actions to 5,828 vendors in FY92. However, only 45 of its vendors received more than 50 procurement actions (approximately 1 per week) during that year. Table 3-7 identifies the 25 vendors that received the most actions. Only three of those vendors are outside a 50-mile radius of

Port Hueneme — UNICOR in Lexington, Kentucky, which received 134 awards; Subscriptions Unlimited in Des Moines, Iowa, which received 98; and Traction International in Oakland, California, which received 93. (Local businesses also dominate the other 20 vendors that received more that 50 procurement actions in FY92.) Although Port Hueneme's procurement practices may not be representative of the entire DoD, they strongly suggest that local procurement activities rely extensively upon nearby businesses for installation support. Similar reliance on local sources was also noted at Camp Lejeune and ANAD.

Table 3-7.
Most Frequently Used Supply Vendors — NCBC, Port Hueneme

Vendor	Location	Number of awards
Modern Wholesale Electric	Chatsworth, CA	343
Quinn Co.	Oxnard, CA	291
Oxnard Pipe and Supply Co.	Oxnard, CA	275
Lautzenhiser's Stationery	Oxnard, CA	260
Elliott Sales and Supply	Ventura, CA	231
Coast Tool, Inc.	Oxnard, CA	228
Gibbs International, Inc.	Oxnard, CA	224
Bud and Ken Lumber Co.	Oxnard, CA	217
Entre Computer Center	Ventura, CA	215
NAPA Auto Parts	Oxnard, CA	214
Tesoro Petroleum	Oxnard, CA	192
B & R Supply Co.	Ventura, CA	172
Gold Coast Industrial Supply	Ventura, CA	168
Government Technology Service	Gardena, CA	166
Golden State Medical Supply	Valencia, CA	134
UNICOR	Lexington, KY	134
Lougee-Michael Equipment	Oxnard, CA	133
Thompson Lumber Co.	Oxnard, CA	131
Christy Sales	Santa Barbara, CA	131
Paradise Chevrolet	Ventura, CA	128
Lewis and Lewis Enterprises	Ventura, CA	121
Harbor Chrysler Plymouth	Ventura, CA	100
Subscriptions Unlimited	Des Moines, IA	98
Traction International	Oakland, CA	93
Port Hueneme Marine Supply	Port Hueneme, CA	90

SUMMARY

Although this chapter focuses on the number of procurement actions issued by various types of DoD activities, the findings are quite startling:

♦ Five of the 13 local procurement activities issue predominantly service contracts.

♦ The number of supply vendors supporting DoD procurement activities is typically large, often more than 3,000.

♦ With two exceptions — DeCA and DCSC — the percentage of supply vendors receiving just one procurement action is relatively high, 38 percent or higher of all vendors.

♦ Even when the supply vendors receiving just one procurement action are eliminated, the average number of actions awarded to each vendor by an activity is surprisingly low — only 6 activities had averages larger than 10.

♦ Most of the local procurement activities award their supply actions to such a large number of vendors that they have little opportunity to satisfy the private-sector rule of thumb of 50 or more actions per vendor for EDI.

♦ If the procurement practices of NCBC, Port Hueneme, are typical for local procurement activities, then nearby vendors dominate supply awards at installation-level activities.

♦ Procurement actions at weapon systems and supply/maintenance procurement activities indirectly generate numerous secondary procurement documents that provide DCMC and DFAS-CO with major EDI opportunities.

In the next chapter, we contrast the above findings with several prior conclusions regarding the potential for EDI in Defense procurement.

CHAPTER 4

EDI and Defense Procurement

INTRODUCTION

Within the past few years, much has been written about the prospects of EDI in Defense procurement, including the following:

◆ A 1990 business case that cited procurement as the functional area offering the greatest potential for direct cost savings through the use of EDI

◆ A 1991 Defense Management Review Decision that called for DoD Components to use EDI for 92 percent of all business transactions by the fourth quarter of FY96

◆ A 1991 electronic commerce program for the DFAS-CO that presented a strategy for processing various business documents (such as contracts, invoices, acceptance notices, and checks) electronically

◆ A 1992 assessment of EDI opportunities in Defense procurement that concluded the DoD's largest procurement activities are the best candidates for EDI

◆ A 1993 review of government practices that directed Federal agencies to improve their procurement practices through increased use of EDI

◆ A 1993 examination of the potential for EDI in Defense contracting that presented a plan for expanding EDI contracting applications throughout the DoD by building upon existing applications.

While these and other publications have done much to promote and expand the use of EDI in Defense procurement, they appear to be refining the DoD's prospects for EDI, particularly its potential for implementation within the next 5 years. This chapter examines that refinement, updates the previous conclusions on EDI in procurement with those from the preceding chapter, and concludes by laying out a strategy for moving forward with an effective EDI program in procurement.

PRIOR EDI EFFORTS

Business Case

Drawing extensively from a macro-level assessment of Defense practices, the business case for EDI estimated that the DoD could save approximately $1.2 billion in direct operating costs over a 10-year period by replacing 16 commonly used documents with their electronic equivalents.[1] Representing the functional areas of procurement and contract administration, transportation, supply and maintenance, and fuels, the documents included purchase orders, request for quotations, bills of lading, and discrepancy reports. Although the private sector routinely claims savings of between $10 and $50 for every paper document eliminated by the use of EDI, the business case used engineered labor standards to obtain conservative estimates of savings that averaged $2.40 for the 16 documents.

Two assumptions were fundamental to the business case:

◆ Each of the 16 documents is replaced with its electronic equivalent.

◆ The rate of implementation (i.e., the percentage of documents replaced by EDI) was identical for all documents, peaking at 78 percent after 10 years.

The first assumption essentially implies that the DoD could substitute electronic transactions for a variety of documents, such as freight government bills of lading, contract modifications, and requests for progress payment. The second assumption goes one step further by concluding that the 16 documents are equally easy to replace with EDI. While both of these assumptions may now need to be examined more closely, they were appropriate for establishing an initial order of magnitude for the savings possible through EDI.

Defense Management Review Decision

Building upon the business case for EDI, DMRD 941, "Implementation of Electronic Data Interchange," 12 November 1991, directed DoD Components to replace the same 16 documents with their electronic equivalents at the earliest possible date. It also programmed budget reductions totaling $548 million, which equaled the projected savings from replacing the 16 documents with EDI transmissions over an 8-year period. It further made available approximately $85 million to fund Military Service and DLA investments in EDI-related hardware and software.

Clearly, DMRD 941 made the same explicit assumptions as the business case — all 16 documents can be replaced with their electronic equivalents and all documents are equally replaceable through EDI. However, it did not restrict the implementation rate to 78 percent but raised it to 92 percent. A revised version

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[1] LMI Report DL001-06R1, *A Business Case for Electronic Commerce*, Thomas P. Hardcastle and Thomas W. Heard, September 1990.

of this same DMRD increased that implementation rate even higher, to 100 percent.

Electronic Commerce Program

The electronic commerce program proposed for the DFAS-CO focused on developing a strategy for implementing EDI and electronic funds transfer to reduce the center's operating costs and improve performance.[2] DFAS-CO, which provides contract payment support to a variety of DoD Components, processes approximately 2.5 million documents annually. The proposed strategy addressed the types of contract documents processed, the number of each document processed during the past year, the availability of widely accepted electronic standards for each document, and the specific DoD activities and commercial organizations with which the center would need to exchange business information electronically. Furthermore, the proposed strategy was projected to result in direct cost savings of more than $61 million over a 10-year period. Much of those savings were expected to result from replacing the traditional paper-based contracts, invoices, and payments with their electronic equivalents.

One of the key contributions of this effort was its focus on the EDI capabilities of trading partners — the Defense activities and commercial organizations that exchange the various business documents with DFAS-CO. Unless all parties (other Defense activities, commercial organizations, and DFAS-CO) have the capability to generate and receive the business documents electronically, EDI cannot succeed.

The DCMC offices that issue price modifications to spare part orders and sign Material Inspection and Receiving Reports play a critical role in providing information to DFAS-CO before payments can be made. DCMC's role of furnishing information to the contract payment process further singles out the importance of secondary documents.

EDI Opportunities

The assessment of EDI opportunities in Defense procurement entailed a broad examination of the potential for various types of DoD activities to use EDI to enhance their procurement operations.[3] It stressed that the largest DoD activities, in terms of number of procurement actions, offer the greatest potential for cost reductions through the use of EDI. It even categorized the DoD's procurement activities as possessing major, medium, or minimal opportunities, with the number of purchase and delivery orders being the primary consideration. It also concluded that implementing EDI at the 12 largest DoD procurement activities,

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[2] LMI Report DL001-02R1, *An Electronic Commerce Program for the Defense Finance and Accounting Service – Columbus Center*, Thomas P. Hardcastle and William R. Ledder, May 1991.

[3] LMI Report DL203R2, *Electronic Data Interchange: Opportunities in Defense Procurement*, Daniel J. Drake, May 1992.

and replacing such documents as purchase orders, delivery orders, invoices, and checks, could save $146 million over a 10-year period.

This effort used different EDI implementation rates for various types of DoD activities. To illustrate: all DeCA regions had a maximum implementation rate of 85 percent, DLA supply centers and Military Service ICPs between 70 and 80 percent, regional contracting centers and large bases between 50 and 75 percent, small bases between 30 and 40 percent, and research and development centers between 15 and 25 percent. Two assumptions served as a basis for these differences in implementation rates:

♦ Some activities, such as DeCA, deal with trading partners that are already well-versed in exchanging procurement-related documents electronically.

♦ Some activities buy many items, including spare parts and medical supplies, that can be described in terms readily conducive to EDI.

National Performance Review

The *National Performance Review* focused on streamlining the Federal government's procurement system, among numerous other improvements.[4] In addition to rewriting regulations and simplifying the procurement process, it called for testing an "electronic marketplace" and increasing the threshold (from $25,000 to $100,000) on the use of simplified purchase procedures. The use of EDI clearly is key to the success of an electronic marketplace, but it is also key to an expansion of simplified purchase procedures. As noted previously in Chapter 2, approximately 98 percent of all Defense procurement actions in FY92 entailed purchases of less than $25,000, which account for most of the procurement actions susceptible for replacement through EDI. Increasing the limit on those types of purchases could further expand the use of EDI in the area of procurement. One of the *National Performance Review*'s recommendations was to "Establish a governmentwide program to use electronic commerce for federal procurement."

Contracting Applications

Building upon successful EDI applications in Defense procurement, an action team comprising high-level DoD personnel undertook a thorough review of the DoD's use of EDI to improve its contracting process.[5] That review resulted in the action team identifying several EDI contracting applications that warrant expanded usage, establishing methods and procedures for standardizing the private-sector's dealings with the DoD, and laying out a plan that calls for widespread implementation of EDI in Defense contracting within 2 years. It also

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[4] Vice President Al Gore, *Report of the National Performance Review: Creating a Government that Works Better & Costs Less*, September 1993.

[5] Office of Deputy Under Secretary of Defense for Acquisition Reform, *DoD Electronic Commerce (EC)/Electronic Data Interchange (EDI) in Contracting*, Department of Defense, December 1993.

called for the creation of a standard trading partner agreement and the solicitation of sources outside local trade areas for electronic requests for quotations.

Like previous EDI-related efforts, this review assumed that a significant percentage (80) of the DoD's small purchases could be made through the use of existing EDI technologies and methods. Furthermore, it focused primarily on the contracting process and targeted more than 200 Defense procurement activities to receive one of several EDI contracting systems that have proven successful at other activities.

Relationship to Earlier Results

The sequence of EDI and procurement efforts presented in this chapter lays out a clear evolution in thinking and approach.

♦ The business case established an initial DoD-wide target for direct savings through the replacement of 16 commonly used business documents with their electronic equivalents.

♦ The DMRD adopted a portion of the business case's savings as budget reductions and provided some investment funds for the DoD Components to achieve those savings.

♦ The electronic commerce program for the DFAS-CO recognized the importance of trading partners to a successful EDI application, which reduced the expected percentage of documents replaced by electronic transmissions.

♦ The assessment of EDI opportunities in Defense procurement introduced additional refinements by acknowledging that some procurement actions are not good candidates for EDI, some industries are much more advanced in EDI applications than others, and some procurements are for materials or services that are not described in terms readily conducive to electronic commerce.

♦ The *National Performance Review* embraced the concepts of electronic procurement and directed that it be fundamental to all Federal procurements in the future.

♦ The contracting applications review, in concert with the thrust of the *National Performance Review*, established an aggressive program for moving forward with an electronic procurement program at more than 200 Defense procurement activities.

The DoD's initial effort, i.e., the business case, was targeted on estimating the overall cost savings possible through the use of EDI. Then, as its understanding of and experience with EDI grew, the DoD's subsequent efforts became more tightly focused — they began to recognize that a number of factors influence successful EDI applications, particularly within procurement. Those factors include

the number of procurement actions that an activity processes every day; the ability of an activity to support an automated procurement function; the ability of the activity's trading partners, both public- and private-sector organizations, to exchange business documents electronically; and the types of items and materials that an activity buys. Yet, as we saw with the sample of 18 activities in Chapter 2, all DoD activities do not currently possess procurement characteristics conducive to a successful EDI application.

♦ Some activities issue just a few thousand contract actions each year, which suggests that they may not have the volume to justify an electronic procurement function.

♦ Some activities, such as Fort Lee, issue mostly contracts for services, which are not readily supported by EDI standards, nor are they likely to be in the foreseeable future.

♦ Some activities, such as Port Hueneme, deal primarily with local, small-business vendors, many of whom are not prepared to change their current personal relationship with Port Hueneme to an electronic relationship.

♦ Some activities, such as Fort Knox, deal with up to 4,000 supply vendors, which implies that most of those vendors would not provide support in an EDI environment because the typical Defense activity cannot deal effectively with that many vendors electronically.

However, a number of DoD procurement activities have the workload to make EDI a viable alternative to current practices: they buy items that are described in terms easily translated into EDI standards, they deal repeatedly with a number of vendors that use EDI in other applications, and they make extensive use of automation in their daily business operations. In the following section, we present a strategy for the DoD to capitalize upon those characteristics.

A STRATEGY FOR THE FUTURE

Based upon the experiences of both public- and private-sector organizations that have had the most success in using EDI to improve their procurement functions, we believe that the DoD needs to target first those procurement activities that offer the greatest benefits from EDI for early implementation. Consequently, we recommend that it adopt a three-tier implementation strategy.

The first tier consists of 70 activities (see Appendix A for a list of the activities), most with DoD-wide procurement responsibility, that possess nearly all of the workload characteristics favorable to EDI — a large number of procurement actions for supply-type items or a large number of secondary procurement actions, extensive automation, and vendors experienced in using EDI. They can readily justify immediate investments in EDI, with a firm promise of quick and substantial cost savings for use in either meeting budget-reduction targets or funding additional EDI investments. They include DeCA regional activities,

DLA centers and activities, DCMC offices, DFAS centers, various Military Service central supply and maintenance activities, and several large installations. Table 4-1 presents the criteria for categorizing procurement activities into the three tiers for implementation priority.

The second tier — consisting predominantly of the 42 (see Appendix B) Military Service's activities that support moderate-sized installations or relatively small central logistics operations — includes a number of activities that ultimately may be excellent candidates for EDI. However, these activities now possess only some of the procurement characteristics favorable to EDI. In addition, the composition of their future procurement workloads is somewhat unclear because of the DoD's emphasis on increasing the use of central procurement actions, national contracts, and other Government-wide contracts. They should be given lower priority than first tier activities for EDI implementation.

The third tier comprises the balance of more than 1,300 DoD activities. Many of these activities issue mostly service contracts that are less conducive to EDI. Others deal predominantly with small, local businesses that either receive only one or two procurement actions annually or do not have the capability to exchange any business information electronically. Still others award only a few procurement actions each year, relying extensively upon central procurement activities and national contracts. The DoD should address the EDI requirements of these activities on an individual basis.

By following this strategy, the DoD will target the most promising activities for early implementation, obtain the maximum benefits from EDI quickly, and establish a foundation for additional successful applications in the future.

Table 4-1.
Criteria for Assessing the EDI Potential of DoD Procurement Activities

Type of activity	Number of actions	Characteristics	EDI implementation priority
Local (installation support)	More than 40,000	Supply purchases are more than 50% of all actions	First tier
	Less than 40,000 but more than 30,000	Supply purchases are less than 50% of all actions	Second tier
	Less than 30,000	Supply purchases are less than 50% of all actions	Third tier
Supply	More than 20,000	Supply purchases are more than 50% of all actions; large number of secondary documents	First tier
	Less than 20,000 but more than 10,000	Supply purchases are less than 50% of all actions; large number of secondary documents	Second tier
	Less than 10,000	Supply purchases are less than 50% of all actions; small number of secondary documents	Third tier
Maintenance	More than 20,000	Supply purchases are more than 50% of all actions, actions concentrated with few trading partners	First tier
	Less than 20,000 but more than 10,000 actions	Supply purchases are less than 50% of all actions, actions concentrated with few trading partners	Second tier
	Less than 10,000 actions	Supply purchases are less than 50% of all actions, actions not concentrated with trading partners	Third tier
Medical	More than 20,000	Supply purchases are more than 50% of all actions, industry trading partners well-versed in EDI	First tier
	Less than 20,000 but more than 10,000 actions	Supply purchases are less than 50% of all actions, industry trading partners well-versed in EDI	Second tier
	Less than 10,000 actions	Supply purchases are less than 50% of all actions, industry trading partners well-versed in EDI	Third tier
Program offices and research and development centers	Less than 10,000 actions	Large number of line items and multiple delivery schedules, but few procurement actions; primary-to-secondary-documents ratio greater than 1:50	First tier
	Less than 10,000 actions	Large number of line items and delivery schedules; primary-to-secondary-documents ratio between 1:25 and 1:50	Second tier
	Less than 10,000 actions	Primary-to-secondary-documents ratio less than 1:25	Third tier

First Tier EDI Implementation Sites

APPENDIX A

First Tier EDI Implementation Sites

Activity/location	Approximate annual procurement actions FY92 (000s)
Major supply activities	
DeCA	
West Service Center, Kelly AFB, TX	
Central Region, NAB Little Creek, VA	
Midwest Region, Kelly AFB, TX	2,510
Northeast Region, Fort Meade, MD	
Northwest/Pacific Region, Fort Lewis, WA	
South Region, Maxwell AFB, AL	
Southwest Region, MCAS El Toro, CA	
DLA	
Defense Construction Supply Center, Columbus, OH	245
Defense General Supply Center, Richmond, VA	235
Defense Industrial Supply Center, Philadelphia, PA	135
Defense Personnel Support Center, Philadelphia, PA	380
Defense Electronic Supply Center, Dayton, OH	105
Medium-size supply activities	
FISC Norfolk, VA	95
FISC Charleston, SC	85
FISC Puget Sound, WA	70
FISC San Diego, CA	55
Navy Ships Parts Control Center, Mechanicsburg, PA	50
FISC Jacksonville, FL	40
Navy Aviation Supply Office, Philadelphia, PA	40
FISC Oakland, CA	25
FISC Pensacola, FL	20
FISC Pearl Harbor, HI	20

Note: DeCA=Defense Commissary Agency; NAB=Naval Amphibious Base; AFB=Air Force Base; DLA=Defense Logistics Agency; NSY=Naval Ship Yard; USAF=United States Air Force; NAWC=Naval Air Warfare Center; ALC=Air Logistics Center; AMC=Army Medical Center; MCAS=Marine Corps Air Station; FISC=Fleet Industrial Supply Center.

Activity/location	Approximate annual procurement actions FY92 (000s)
Major hospitals	
Walter Reed AMC, Washington, DC	40
Brooke AMC, Fort Sam Houston, TX	25
Large maintenance activities	
Tooele Army Depot, UT	26
NSY Norfolk, VA	25
NSY Mare Island, CA	20
Major local activities	
Wright-Patterson Contracting Center, Dayton, OH	145
MacDill AFB, FL	90
Eglin AFB, FL	90
Davis Monthan AFB, AZ	70
USAF Academy, Colorado Springs, CO	65
NAWC, China Lake, CA	65
March AFB, CA	60
Fort Sill, OK	60
Lackland AFB, TX	55
Andrews AFB, MD	55
Fort Hood, TX	55
Fort Bragg, NC	50
Grand Forks AFB, ND	45
Offutt AFB, NE	45
Fort Lewis, WA	45
Fort Knox, KY	45
Bergstrom AFB, TX	45
McChord AFB, WA	45
Tinker AFB, OK	40
Griffis AFB, NY	40
Weapon system program offices and supply activities[a]	
U.S. Army[b]	
Tank and Automotive Command, MI	
Missile Command, AL	
Armament and Munitions Chemical Command, IL	
Aviation Systems Command, MO	

Note: DeCA=Defense Commissary Agency; NAB=Naval Amphibious Base; AFB=Air Force Base; DLA=Defense Logistics Agency; NSY=Naval Ship Yard; USAF=United States Air Force; NAWC=Naval Air Warfare Center; ALC=Air Logistics Center; AMC=Army Medical Center; MCAS=Marine Corps Air Station; FISC=Fleet Industrial Supply Center.

[a] Activities with large secondary document volumes.

[b] Army Materiel Command activities contain both system program offices and supply activities.

Activity/location	Approximate annual procurement actions FY92 (000s)
Weapon system program offices and supply activities[a] (continued)	
U.S. Navy	
Naval Air Systems Command HQ, VA	
Naval Undersea Systems Command, RI	
Naval Ocean Systems Command, CA	
Naval Sea Systems Command HQ, VA	
Naval Space and Warfare Command HQ, VA	
U.S. Air Force	
Aeronautical Systems Center, OH	
Electronic Systems Center, MA	
Space Systems Center, CA	
San Antonio Air Logistics Center (ALC), TX	
Warner Robins ALC, GA	
Sacramento ALC, CA	
Ogden ALC, UT	
Oklahoma City ALC, OK	
Contract management and payment activities	
Defense Contract Management Districts (DCMDs)	
DCMD Northeast, Breton, MA	
DCMD South, Atlanta, GA	
DCMD West, Los Angeles, CA	
DCMD Mid-Atlantic, Philadelphia, PA	
DCMD Central, Chicago, IL	
Defense Finance and Accounting Service — Columbus Center, OH	

Note: Approximate annual procurement actions are not included for DCMDs, Weapon system program offices, and their support supply centers since their primary action volumes are low; however, together they process a large number of secondary procurement documents (e.g., invoices, receiving reports, repricing modifications).

DeCA=Defense Commissary Agency; NAB=Naval Amphibious Base; AFB=Air Force Base; DLA=Defense Logistics Agency; NSY=Naval Ship Yard; USAF=United States Air Force; NAWC=Naval Air Warfare Center; ALC=Air Logistics Center; AMC=Army Medical Center; MCAS=Marine Corps Air Station; FISC=Fleet Industrial Supply Center; HQ=Headquarters.

[a] Activities with large secondary document volumes.

Second Tier EDI Implementation Sites

Appendix B

Second Tier EDI Implementation Sites

Activity/location	Approximate annual procurement actions FY92 (000s)
Medium-sized activities	
Barksdale AFB, LA	39
Fort Leavenworth, KS	38
Holloman AFB, NM	38
Elmendorf AFB, AK	36
Fort Stewart, GA	36
Maxwell AFB, AL	35
CoE District Vicksburg, MS	34
Fort Riley, KS	34
Fort Gordon, GA	34
Aberdeen Proving Ground, MD	34
Fort Campbell, KY	34
Ellsworth AFB, SD	33
Nellis AFB, NV	33
Fairchild AFB, WA	33
Minot AFB, ND	33
Fort Rucker, AL	33
Scott AFB, IL	32
CoE Waterways Research Station, MS	32
Patrick AFB, FL	32
Kelly AFB, TX	32
McClellan AFB, CA	31
Malmstrom AFB, MT	31
Fort Meade, MD	31
Langley AFB, VA	30
Randolph AFB, TX	30
Hanscom AFB, MA	30
Fort Leonard Wood, MO	30
MCB Camp Lejeune, NC	30
Fort Detrick, MD	30
Robins AFB, GA	30

Note: AFB=Air Force Base, MCB=Marine Corps Base, CoE=Corps of Engineers, AMC=Army Medical Center, NSY=Naval Ship Yard, MC=Marine Corps.

Activity/location	Approximate annual procurement actions FY92 (000s)
Small supply centers	
MC Logistics Base Barstow, CA	16
MC Logistics Base Albany, GA	12
Medium-sized hospitals	
Madigan AMC, WA	18
Fitzsimons AMC, CO	16
Wm. Beaumont AMC, TX	13
Tripler AMC, HI	13
Medium-sized maintenance activities	
Anniston Army Depot, AL	18
Letterkenny Army Depot, PA	13
Red River Army Depot, TX	13
NSY Portsmouth, NH	12
Tobyhanna Army Depot, PA	11
NSY Philadelphia, PA	11

Note: AFB=Air Force Base, MCB=Marine Corps Base, CoE=Corps of Engineers, AMC=Army Medical Center, NSY=Naval Ship Yard, MC=Marine Corps.

REPORT DOCUMENTATION PAGE

Form Approved
OPM No.0704-0188

1. AGENCY USE ONLY *(Leave Blank)*	2. REPORT DATE Jun 94	3. REPORT TYPE AND DATES COVERED Final

4. TITLE AND SUBTITLE An EDI Strategy for Defense Procurement	5. FUNDING NUMBERS C MDA903-90-C-0006 PE 0902198D

6. AUTHOR(S)

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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Logistics Management Institute 2000 Corporate Ridge McLean, VA 22102-7805	8. PERFORMING ORGANIZATION REPORT NUMBER LMI– CC203R1

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Director, Functional Information Management Office of the Deputy Assistant Secretary of Defense (Information Management) Crystal Gateway 2, Suite 910 1225 Jefferson Davis Highway Arlington, VA 22202	10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT A: Approved for public release; distribution unlimited	12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

This report provides a strategy to maximize the benefits of the use of electronic data interchange (EDI) in DoD procurement. DoD buying, contract administration, and payment activities with the greatest opportunity to benefit from EDI are listed. These activities were identified based on analysis of detailed procurement statistics from 18 representative buying activities. Factors considered were the number of procurement actions, number of supply procurements, number of trading partners, and number of supply buys per trading partner. Also analyzed was the number of secondary procurement documents created by different types of procurement activities. A criteria for assessing the EDI potential for various types of DoD procurement activities is provided.

14. SUBJECT TERMS Electronic data interchange; procurement automation; acquisition management; electronic commerce; paperless procurement; paperless processes; electronic commerce opportunities	15. NUMBER OF PAGES 52
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL